Energy Policy Update

January 6, 2014

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ARIZONA-RELATED

APS Closes 3 Units at 4 Corners Power Plant

Utility buys main stake in 2 remaining units to comply with EPA rules

[Arizona Republic, Dec. 30] Three coal-fired generators that opened in the 1960s near Farmington, N.M., closed Monday as part of a $182 million plan for Arizona Public Service Co. to meet environmental regulations, the utility reported. APS Vice President of Fossil Generation David Hansen traveled to the Four Corners Power Plant on Monday for a ceremony with the 434 plant workers to mark the closure. APS also purchased a larger stake in two units that will remain open at the plant, a move that could cost APS customers almost $3 a month. The transaction is part of APS' proposal to meet Environmental Protection Agency requirements for pollution from the plant's five generators. Rather than pay to upgrade the three oldest units, APS closed them and paid $182 million for a larger stake in Units 4 and 5, which don't need as much investment to meet EPA standards. APS has not been replacing workers at the plant as they quit or retired since 2010 when the plan was first proposed, avoiding layoffs from the closure, Hansen said. No layoffs are planned because the 120 remaining workers from the first three units will be needed during the next three years to decommission the plant, he said. After that, they should all be absorbed into the larger workforce of the bigger two units that remain open.

APS Completed Its Purchase of the Four Corners Power Plant

[Phoenix Business Journal, Dec. 31] Arizona Public Service Co. completed its $182 million purchase Monday of the Four Corners Power Plant in a move that will benefit the environment and satisfy environmental regulations, APS officials said. APS bought two power units of the plant near Farmington, N.M. from Southern California Edison, and has plans to install extra emission controls on the two newer, environmentally upgraded units. The state's largest electric utility also closed three of the plant's older, less efficient coal-fired power units during a Monday ceremonial closing for plant employees. The units had been supplying energy since the 1960s.

Eco-Friendly Construction Giant Faces Attacks

[Arizona Builder's Exchange, Dec. 15] Portland, OR – Leadership in Energy &

Environmental Design, the longstanding king of green construction and renovation projects, could change as legislation and executive orders in several states have all but banned LEED from public contracts, and a new system known as Green Globes has emerged and marketed itself as a simpler, less expensive alternative. Green Globes has issued about 850 building certifications in the past few years, and has recently picked up support from the federal government. The timber, plastics and chemical industries support Green Globes "because it does not represent a threat to them. It's their way of having a green building without having to change their practices," said Scot Horst, a senior vice president who oversees LEED for the U.S. Green Building Council, a nonprofit based in Washington, D.C. Though LEED is voluntary and market-based, more than 30 states, multiple cities and the federal government either require LEED construction or incentivize its use in public buildings. LEED has 44K U.S. projects, many of which are federal, state and local government buildings. Critics say it's a cumbersome monopoly that doesn't always deliver what it promises. But supporters counter that opponents are pushing the alternative system to redefine the meaning of "green" and skirt LEED's stringent environmental standards, which were updated last month. While most of the orders, amendments and bills don't mention LEED by name, several ban rating systems that they say discriminate against American wood products. That's a direct stab at LEED, which recognizes a single, stringent forest certification system — one that's opposed by timber industry giants such as Weyerhaeuser, because it does not certify some U.S. timber. Green Globes accepts less stringent forest certification programs.

Efficiency and Renewables Are Alike — But They Aren't The Same Thing

[Arizona Republic, Jan. 4] Solar-industry leaders began making an odd argument this fall amid the debate over net metering, the credit paid to rooftop solar customers for their excess power that gets sent to the grid. Court Rich, the attorney for the Solar Energy Industries Association, and Jason Rose, the publicity man for major rooftop installers including SolarCity Corp. and Sunrun Inc., began to argue that rooftop solar panels are just like shade trees, compact-fluorescent lightbulbs and other energy-efficient appliances that reduce the amount of electricity people use. They argued that because utilities support efficiency measures that help customers cut their energy use, they should also support rooftop solar and net metering. At the time, Arizona Public Service Co. was applying to charge higher bills to solar customers. Despite a rebuke from Arizona Corporation Commissioner Bob Stump during the regulatory hearing on net metering, the solar advocates continue to suggest that renewable energy and energy efficiency are the same. The Arizona Solar Energy Industries Association was the most recent to suggest the comparison in a tweet Dec. 24. Energy-efficiency experts said the comparison is unfair, as efficiency is far less expensive and far more accessible to the average person than rooftop solar. "Most people recognize they are a different species," said Steven Nadel, executive director of the American Council for an Energy-Efficient Economy in Washington, D.C., a nonprofit that promotes energy efficiency to benefit the economy, energy independence and the environment. Nadel and ACEEE support solar and other renewable energy, but like most energy experts, they suggest customers take efficiency measures first.

Former Phoenix Mayor Floats Water-Desalination Effort with Mexico

[Arizona Daily Star, Dec. 15] PHOENIX — The former mayor of the nation's sixth-largest city wants Arizona to form a partnership with Mexico that would build desalination facilities and tap the ocean's limitless supply of water. Phil Gordon, mayor from 2004 to 2011, said bringing in desalinated Gulf of California water would secure Arizona's future, increase collaboration with Mexico and create economic opportunity on both sides of the border. "I want to see a desalination plant built because, as mayor of Phoenix, I knew how valuable water is ," he said. "Not only the Valley but in the world, water is going to become, if it's not already, more valuable than gold or oil." Raising the idea in a November column in The Arizona Republic, Gordon said one benefit of desalinated water would be allowing Mexico and Arizona to create more farmland. "Use that water for putting all those millions of acres of desert in Northern Mexico and Southern Arizona into

food production and become not only a water-producing area but also a breadbasket for the U.S. and the world," he said. Acting now would provide a long-term supply before an emergency leaves the state and northern Mexico scrambling, he said.

New Year Brings Higher Arizona Gas Price

[Phoenix Business Journal, Jan. 3] Arizona fuel prices have reversed their downward course of late, with the statewide average cost for a gallon of regular unleaded gas climbing 4 cents to $3.19, according to AAA Arizona. The travel agency cited higher crude oil costs and refinery issues for the rise in fuel prices. "2013 was a pretty mild year for gas prices," said Linda Gorman, director of communications and public affairs for AAA Arizona. In fact, the year-long average for Arizona was $3.40 a gallon, which was 17 cents lower than the 2012 average of $3.57." AAA projects 2014 to be more of the same, with possibly even lower prices. "We anticipate that prices will likely average slightly less in 2014, especially as cars grow more fuel efficient and refineries expand production," Gorman said. However, by their nature, gas prices are volatile and unforeseen issues can arise to send prices up or down.

Solar Units Could Be Reclassified

Regulators weigh using heaters to fill renewable energy mandate

[Arizona Republic, Dec. 23] Utility regulators recently debated whether to provide incentives to Arizona Public Service Co. customers who install solar water heaters. The utility is already exceeding its state-mandated renewable-energy goals, so it's questionable whether APS needs to provide rebates for the appliances, despite the fact that the heaters are seen as a cost-effective way for customers to cut their bills and save energy. The renewable-energy standard requires APS to increase its use of renewable power annually until eventually getting 15 percent of its power from renewables by 2025. This year the requirement is 4 percent and APS is getting 6.5 percent. It already exceeds the requirement in 2017 for the amount of power from rooftop solar electric and solar water heating, referred to as distributed sources. In the end, the regulators approved small incentives for the appliances in 2014, amounting to pennies on the average customer's bill to help sustain the option for customers to take rebates when they install the heaters. But the debate is likely to resurface next year. Some officials in the water-heating industry worry they would be forced out of business without the subsidies. It's possible that in four or five years, when APS once again needs more "distributed" renewable energy to meet its state mandate, it will resume the incentives. But at that point, there might not be many companies around to meet the demand. A possible way to encourage continued funding of solar water heating would be to count it as an energy-efficiency measure, rather than as renewable power. What's the difference? Arizona regulators have different goals for energy efficiency and renewable power, and utilities such as APS collect tariffs from customers to fund those goals.

ALTERNATIVE ENERGY AND EFFICIENCY

Clouds Over Hawaii's Rooftop Solar Growth Hint at U.S. Battle

[Reuters, Dec. 16] When Gloria Adams signed a contract to install a rooftop solar power system on her Oahu home in late August, she looked forward to lower electric bills and a return on her investment in the years ahead. She never dreamed that she would have to stop the project, get the Hawaiian Electric Company's permission before she could proceed, and possibly help pay for any upgrades to her neighborhood's electricity circuits to handle the extra load. Her home improvement ran afoul of a rule that went into effect in September. The regulation requires homeowners on Oahu - Hawaii's most populous island - to get the utility's approval before installing photovoltaic (PV) rooftop solar systems. In areas like Mililani, where Adams lives, the utility's power circuits have reached a threshold where it would be dangerous to add PV systems without investing in upgrades to the distribution system.

Energy Efficiency Driving Innovation

[Energy Manager Today, Jan. 6] Emphasis on energy efficient products over the next decade is expected to drive an expanding use of digital power management in

applications such as DC-DC converters, says Reinhold Theurer, vice president EMEA in Electronics Weekly. Power electronic devices in controlling electrical systems is increasing as governments introduce new standards and consumers demand lower power consumption and greater energy efficiency with ever rising energy costs. Manufacturers are replacing electro-mechanically actuated systems using AC-induction or brushed-DC motors with permanent magnet variable-speed drives.

Making a Building's Water System Into a Hydroelectric Plant

[New York Times, Dec. 13] HONG KONG — Daryl Ng was taking a long shower, as he does every morning. And his wife, as she does every morning, scolded him for needlessly using so much water. "How can I justify the amount of time I'm taking?" Mr. Ng recalled thinking to himself. And while looking at the water running down the drain, he got an idea. Why not harness that wasted water running down the drain? With Hong Kong's high concentration of skyscrapers, could gravity generate a considerable amount of electricity? Fortunately, Mr. Ng is the grandson of the founder of Sino Land, a Hong Kong property developer, and one of the company's executive directors. So he set up a prototype system in Olympian City, one of the company's shopping malls in Hong Kong. The system uses excess pressure in the water system to spin a Swiss-built turbine, which generates electricity to power the lights in a back room. Mr. Ng is also installing turbines in the company's newest apartment development, The Avenue, in Hong Kong's Wan Chai neighborhood, that should be able to power the lighting in the stairwells, elevator shafts and lobby. There are many reasons the novel idea might not work. Small-scale systems cannot easily generate enough power to justify their cost to large developers. The price per kilowatt-hour of generating power can be five times as high as simply buying it from the grid. And factors like simple geography — will water be flowing far enough down? — can derail plans for turbines built into municipal water infrastructure. Nonetheless, the developer has pitched the concept to the governments of Beijing, Hong Kong and Singapore. He said the feedback from Hong Kong in particular had been very positive, with the city's new director of water supplies, Enoch Lam, expressing interest.

Spain's Solar Pullback Threatens Pocketbooks

[New York Times, Jan. 5] Águilas, SPAIN — Six years ago, Justo Cruz Rodríguez, who runs a small business here designing signs, was looking for a way to generate a steady, if modest, pension for himself and his father. So when the government passed a law offering attractive rates for solar energy — and guaranteed them for the next 25 years — he mortgaged his house, his father's house and even his workshop to install half a dozen rows of solar panels in his father's garden, with the idea of selling his excess electricity. "It seemed so safe," he said recently. "It was a government guarantee." But the Spanish government has changed its mind. It plans to pay less, a lot less. Under legislation that goes into effect this year, it will drop its per-kilowatt-hour payment system altogether and effectively impose retroactive cuts in payments. It also plans to make solar power producers pay a charge on electricity they generate and use themselves, a measure that angry protesters have named the "sun tax." Spain has good reason for wanting to take action. It is facing a growing deficit — about $40 billion now — because it has never passed on the true cost of producing energy to its consumers, a problem that has ballooned with the economic crisis. If it does not do something, that deficit will only grow, experts say. Energy experts across Europe are watching Spain's actions closely, however, wondering if they amount to folly. Thousands of solar energy investors large and small will doubtless face insolvency, and perhaps just as worrisome, experts say, the new charges for those using their own electricity may set off a rush by owners of solar panels to find ways to sell or use their electricity without reliance on the national grid at all, further reducing its customer base.

State Energy Financing Report Now Available

[NASEO website, Dec. 20] The 56 State and Territory Energy Offices' investments in energy efficiency and renewable energy projects have grown over three decades, not only through cost-shared support for technology demonstrations and commercialization,

but also through a variety of financing programs and mechanisms. Over the past several years, the number and scale of these public-private financing programs have grown; the total estimated investment stands at $3 billion in 2013, with significant additions expected in the coming year. The types of financing tools used by State Energy Offices have evolved from revolving loan funds to sophisticated credit enhancement mechanisms and new approaches to bond financing. With successful models expanding across the United States, the National Association of State Energy Officials (NASEO) has completed an analysis of state energy financing programs focused on the buildings and industrial sectors to identify and evaluate approaches that have been implemented by State Energy Offices and their public and private partners.

U.S. Solar Panel Maker Seeks to Close Loophole in Duties on Chinese Products

[New York Times, Dec. 31] A major maker of solar panels opened another chapter in a long-simmering trade dispute on Tuesday, asking the Commerce Department to impose new duties on imported modules made of certain components from China or Taiwan. The petition, brought by SolarWorld Industries America, is intended to close a loophole in the United States decision to impose duties on imported Chinese modules. Should the petition go forward, it could effectively block Chinese manufacturers from the American market, said Shayle Kann, vice president of research at GTM Research, which tracks clean-tech industries. In 2012, the United States issued final rulings that Chinese solar companies had received unfair subsidies from their government and dumped products on the American market below costs. But the duties, roughly 24 to 36 percent, applied only to panels made from Chinese solar cells, the final major parts that are assembled into finished modules. As a result, many Chinese companies were able to avoid the duties by assembling panels from cells produced elsewhere, especially in Taiwan, even if those cells were derived from components — called ingots and wafers — from China. Should SolarWorld win the case, modules made from Taiwanese cells or cells made from Chinese ingots or wafers would be subject to duties as well.

ENERGY/GENERAL

IEA's World Energy Outlook 2013: Renewables and Natural Gas to Surge Through 2035

[Power Magazine, Jan. 1] 2035, renewables will hold a 30% share of the global power mix, but only 1% of the world's fossil fuel–fired power plants will be equipped with carbon capture and storage (CCS), reports the International Energy Agency (IEA) in its newly released World Energy Outlook (WEO-2013). The annual report presents a central scenario in which global energy demand rises one-third by 2035, driven higher by the growing populations and expanding economies of India and Southeast Asian countries rather than by China. Meanwhile, more than half of the projected increase in global primary energy demand will come from the power sector (Figure 1), the agency projects.

New Energy Struggles on Its Way to Markets

[New York Times, Dec. 27] WASHINGTON — To stave off climate change, sources of electricity that do not emit carbon will have to replace the ones that do. But at the moment, two of those largest sources, nuclear and wind power, are trying to kill each other off. In the electricity market, both are squeezed by pressure from natural gas, which provides some carbon reductions compared with coal but will not bring the country anywhere near its goal for reducing greenhouse gas emissions. Natural gas has a carbon footprint that is at least three times as large as that goal. Energy companies announced this year that five nuclear reactors would be closing or not reopening, and the owners blamed competition from natural gas and wind. In the Pacific Northwest, wind and hydroelectricity — neither of which produce carbon — are sparring to push each other off the regional power grid. Output from the two has sometimes forced the Columbia Generating Station in Washington State, the region's only surviving nuclear reactor, to cut back its production. One recent study found that shutting down the reactor would save consumers $1.7 billion, partly because it cannot run full time, and partly because its costs are higher than some other technologies. If electricity prices were

slightly higher, renewable sources of energy would flourish and even some reactors would be built, experts say, lowering carbon emissions. But electricity prices are being forced down by federal subsidies for wind energy production and by cheap natural gas.

NY City Greenhouse Gas Emissions Drop 19 pct since 2005

[Yahoo News, Dec. 30] New York City's greenhouse gas emissions have dropped by 19 percent since 2005, outgoing Mayor Michael Bloomberg said on Monday, putting the city nearly two-thirds of the way to meeting the goal that Bloomberg set five years ago. Bloomberg announced the progress report as he prepares to leave the mayor's office on Wednesday after 12 years in office. In the comprehensive climate change blueprint he launched in 2007, called PlaNYC 2030, Bloomberg set a goal to slash citywide emissions 30 percent by 2030 through a number of initiatives, such as requiring hybrid taxi cabs and retrofitting municipal buildings to make them more energy efficient. Sergej Mahnovski, director of the city's office of long-term planning and sustainability, said on Monday that New York's air is the cleanest it has been in 50 years and that the city is on track to make even deeper emissions cuts. "The key message is that local governments can work together with utilities, regulators, environmental partners, developers and communities to test-bed new concepts and sharply reduce emissions with state-of-the art analytics, financial products and technical resources," he said.

Taking a Look Back at Top Power Generation Stories of 2013

[Power Engineering, Jan. 6] The U.S. power generation sector continues to move toward a future that will be less dependent on coal-fired baseload capacity. Coal continues to be squeezed by cheap gas, weak power demand, ever-tougher environmental standards and markets that often don't adequately reward fuel diversity or capacity needs, according to a study commissioned by the Department of Energy (DOE). More recently, the Energy Information Administration (EIA) predicted that coal will see its share of the U.S. power generation mix eclipsed by natural gas in 2040. While higher natural gas prices allowed coal to recapture some of the power generation output share it lost to gas in 2012, the trends for installation of new generating capacity favor gas over coal. Through the first 11 months of 2013, about 6,568 MW of natural gas-fueled generating capacity has been installed, according to the latest infrastructure update from FERC. By contrast, only 1,543 MW of new coal generating capacity was installed during the first 11 months of the year. Various estimates have suggested that upwards of 60 GW of coal capacity could be retired by 2016 due to cheap gas, EPA's impending Mercury and Air Toxic Standards (MATS) and EPA's proposed CO2 standards for new and existing power plants. Coal retirement news has sparked concern about regional grid reliability. FERC has become increasingly focused on gas-electric interdependence issues. ISO New England (ISO-NE), for instance, is working on short-term and long-term enhancements to better ensure that it builds fuel security into its generation markets. Not all the future coal news is bad. The newer, scrubbed units should be well positioned for the future. In addition, Duke Energy (NYSE:DUK) has started operation of its Edwardsport coal gasification power plant in Indiana. Likewise, the Southern (NYSE:SO) subsidiary Mississippi Power is also in advanced stages of construction of its Kemper lignite coal gasification plant in Mississippi. Nuclear retirements, consolidation among other issues during 2013

The Year In Coal -- A Look Back

[Fierce Energy, Jan. 2] Last year saw many of changes for coal as solar and wind generation hit record highs and prices declined. Installation of renewable energy capacity outpaced coal, oil, and nuclear growth combined. Nationwide, 30 percent of existing U.S. coal plants (158 -- or more than 20 percent of the nation's coal power) is set to retire. In 2013, more than 2,000 activists nationwide descended upon hearings held by the U.S. Environmental Protection Agency to protect the public from carbon pollution, more than 10,000 showed up to oppose coal exports out of the Pacific Northwest, and more than 200,000 people submitted comments to curb coal pollution and invest in clean energy. The year saw 39 existing coal plants retired or announced to retire (a total of 22,164 MW) -- an average of three coal plants per month while leading investors like Warren

Buffett publicly announced that coal will decline in importance. At the end of 2013, Buffett's utility MidAmerican Energy ordered $1 billion worth of wind turbines for Iowa, where wind is the cheapest source of power, announcing that "wind power provides a hedge for our customers going forward in an era of reduced coal generation."

INDUSTRIES AND TECHNOLOGIES

Ford Tries to Harness Sun in New Hybrid Car

[Associated Press, Jan. 6] LAS VEGAS — Ford Motor Co. plans to unveil at this month's International CES gadget show a solar-powered concept car that offers the same performance as a plug-in hybrid but without the need for a plug. The C-MAX Solar Energi Concept car uses a gasoline engine combined with a gizmo that acts like a magnifying glass to concentrate the sun's rays on the vehicle's roof-mounted solar panels. The automaker says the vehicle's estimated combined city-highway mileage is 100 mpg. Ford says that by using solar power instead of an electric plug, a typical owner will reduce annual greenhouse-gas emissions by 4 metric tons. The company says it sold about 85,000 hybrid or electric vehicles in 2013, including 6,300 units of its C-MAX Energi plug-in hybrid.

Smart Buildings and Smart Cities to Take Center Stage

[Energy Manager Today, Jan. 3] While clean energy projects have faced budgetary and policy challenges, the most effective efforts to reduce carbon emissions may no longer come from building new generation resources. The Memory consultancy believes the short term solution to achieving a low carbon economy in the 21st century is by putting lot more effort into reducing CO2 emissions in buildings and cities. Memoori expects that in 2014 governments will take a route through providing more attractive financial inducements for all those that install plant equipment and controls which reduce energy consumption in buildings and combine this with more stringent regulatory targets. This can be achieved through private investment with technologies that are now well proven, and a capable competitive supply structure that can deliver. Further support is coming from Smart Cities. As cities across the world face aging infrastructures and dwindling financial resources, city governments will increasingly undertake initiatives to manage these challenges such as Smart Grid technologies for grid modernization; outage management; and integration of a variety of power generation sources, including on-premises generation, and consumer energy management solutions.

Tesla Batteries May Lower Utility Bills

[Transmission & Distribution World, Jan. 1] SolarCity, the Silicon Valley solar installer, will start providing Tesla batteries for businesses that want to cut their utility bills. SolarCity DemandLogic can allow businesses to reduce energy costs by using stored electricity to reduce peak demand, and can also provide backup power during grid outages. Developed with advanced battery technology from Tesla, SolarCity DemandLogic storage includes learning software that automates the discharge of stored energy to optimize utility charge savings for customers. *The Atlantic* reported that the batteries were "powering an energy revolution," as the systems have started appearing in a small number of California homes to store electricity generated by rooftop solar panels. SolarCity storage systems are available to new solar power customers through 10-year service agreements including monthly payments, with no upfront cost required. SolarCity will customize the system size to make it possible for businesses to save money immediately by saving more on energy costs than they spend for the storage service. Unlike load shifting approaches to demand management, this product requires no change in operations for the business and is fully automated.

LEGISLATION AND REGULATION

Mexican State Legislatures Pass Energy Reform Bill

[Arizona Daily Star, Dec. 17] MEXICO CITY — In a steam-roller operation that ended Monday, a majority of Mexico's state legislatures approved sweeping energy legislation that will allow private companies to explore for and produce oil and gas in the country. It

took only about three days for 17 of the 31 state legislatures, one more than needed, to approve the transformation of Mexico's state-controlled oil industry that Congress passed last week. Some of the State Congresses voted through the laws in the early morning hours after little or no debate. President Enrique Peña Nieto's Institutional Revolutionary Party, the PRI, relied on its dominance of most legislatures to push the bill through despite protests staged by opponents of the changes. The PRI ruled Mexico from 1929 to 2000 relying on rubber-stamp congresses, and though Mexico has become much more of a democracy since then, many saw similarities to the party's old ways.

Small Vt. Utility Ordered to Stop Net Metering

[Associated Press, Dec. 11] MontpelieR, VT – Vermont regulators have ordered the Washington Electric Co-operative to suspend a program that allows homeowners to work their electric bills down to zero by installing solar, wind or other renewable energy projects that send power back to their utility's grid, saying the small utility is violating state law. The East Montpelier-based co-op announced in October that it was limiting net-metering projects to 5 kilowatts because it had exceeded a state cap that only allows it to get 4 percent of its peak demand from such projects. The program has proven popular, with Vermont's net metered power generation more than tripling since early 2011. Some utilities have complained that pushing monthly bills down to zero allows customers to avoid paying their share of basic system costs like utility management and line repairs. But Chris Recchia, commissioner of the Vermont Public Service Department, argued in an interview that utilities are benefiting significantly from net metering even without levying a service charge to net-metered customers. The Vermont Electric Power Co., which operates the state's high-power transmission backbone, has deferred millions of dollars in system upgrades because of individual customers contributing power along the grid through net metering, Recchia said.

Wind Production Tax Credit Expires with Uncertain Impact

[Power Magazine, Jan. 2] The controversial federal production tax credit (PTC) bestowed on new wind farms of $0.023/kWh for the first 10 years of their operation expired on Tuesday, but the impact of that policy lapse isn't immediately clear. Originally enacted in 1992, the federal renewable electricity PTC has been renewed and expanded numerous times—most recently by the American Recovery and Reinvestment Act of 2009 and the American Taxpayer Relief Act of 2012 in January 2013. Congressional extension of the tax credit last year made the significant change of removing "placed in service" deadlines and replacing them with deadlines that use the beginning of construction as a basis for determining facility eligibility. Last year, Congress extended the deadline for wind energy facilities by one year, from Dec. 31, 2012, to Dec. 31, 2013. According to the American Wind Energy Association (AWEA), the estimated impact of uncertainty posed by the PTC's expiry is still being vetted. The most uncertainty will be felt by wind manufacturers, which could see orders in the pipeline dry up, the industry group noted.

WESTERN POWER

Despite Blizzards, Temperatures Rising in Colorado Over Rooftop Solar Energy

[Forbes, Jan. 5] Just as a massive snow storm has bitten the eastern United States, a heated battle is about to consume the state of Colorado. It is pitting the rooftop solar energy business against the legacy utility companies, both of which fear they would get a raw deal as an increasing number of consumers potentially detach from the grid. The price of rooftop solar panels is falling fast while the cost of utility-generated electricity is escalating. Meantime, state incentives are expected to lead to the use of more such distributed generation or onsite power. The debate is over how to share costs: Consumers generating their own juice say that they are preventing wear and tear of the utilities' infrastructures while the power companies say that they must still maintain the grid and keep enough power on hand to meet peak demand, which benefits both traditional customers and distributed producers. "The proceedings in Arizona, Colorado and California all indicate that avoided utility costs are emerging as the way to determine 'net-energy metering' photovoltaic value (PV)," says Wade Shafer, senior analyst

covering North American PV at IHS IHS -0.57% Inc. “However, with no single methodology for determining avoided costs, the debate over net-energy metering benefits to the greater power systems are likely to continue.”

Solar Goes Big in Texas as First Phase of 400-MW PV Farm Comes Online

[Renewable Energy World, Jan. 6] Texas is known for going big. In a state with so much land and so much sun it’s no wonder that the state is starting to warm to solar. And while much of the news surrounding the giant solar farms (100 megawatts or more) in the U.S. and world is coming from California and Arizona, the 400 megawatt Alamo Solar Project will shine some of that light on the Lone Star state. OCI Solar Power announced that it completed the first, 41-megawatt phase of the gargantuan project, which is providing solar power to CPS Energy’s customers in San Antonio. Once completed this project alone will propel Texas to one of the leading U.S. states for solar. After all, when the Solar Energy Industries Association and GTM Research released their “U.S. Solar Market Insight: Year-in-Review 2012” this past March only California, Arizona and New Jersey had more than 400 megawatts of solar online. Still, California’s amount of online solar is expected to exceed 2,000 megawatts of power by the end of 2013, so Texas has a way to go if it wants to catch up to California.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here. LEARN MORE

- Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury’s SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona. LEARN MORE

- Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000). LEARN MORE

- AZ Fast Grant - Enables Arizona-based technology companies to initiate the commercialization process. Total funds available for this grant round are $175,000. Maximum awards of $5,000 and $20,000 will enable companies to accomplish one of four scopes of work. LEARN MORE

- AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets. LEARN MORE

- Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. LEARN MORE

Healthy Forest - The primary goal of the Healthy Forest Enterprise Incentives Program is to promote forest health in Arizona. The program achieves this by proving incentives for certified businesses that are primarily engaged in harvesting, processing or transporting of qualifying forest products. LEARN MORE

Job Training Program offers job-specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round. LEARN MORE

Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round. LEARN MORE

Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue. LEARN MORE

Quality Jobs Tax Credit Program - The primary goal of the Quality Jobs Tax Credit program is to encourage business investment and the creation of high-quality employment opportunities in the state. The program accomplishes this goal by providing tax credits to employers creating a minimum number of net new quality jobs and making a minimum capital investment in Arizona. LEARN MORE

Bonds Administered by the Arizona Commerce Authority

- Private Activity Bonds (PAB) - Tax exempt bond financing, for federal purposes, offers an alternative financing mechanism for certain projects. LEARN MORE
- Qualified Energy Conservation Bonds (QECB) - Tax credit bonds are available as an alternative financing mechanism for certain green projects. LEARN MORE

Federal Programs

- Small Business Innovation Research (SBIR) Program - SBIR is a competitive program that encourages small businesses to explore their technological potential, as well as, providing incentive to profit from its commercialization. LEARN MORE
- Small Business Technology Transfer (STTR) Program - STTR is an important small business program that expands funding opportunities to meet the nation's scientific and technological challenges in the 21st century. LEARN MORE
- Work Opportunity - The Work Opportunity Tax Credit (WOTC) is a federal tax credit of up to $9,000 that Congress provides to private-sector businesses for hiring individuals from nine target groups who have consistently faced significant barriers to employment. LEARN MORE

Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Sales Tax Exemption for Machinery and Equipment
  Exemptions are available for:

  1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).
  2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
  3. Machinery or equipment used in research and development, see ARS 42-5159(B) (14).

Questions can be directed to Christie Comanita (602-716-6791).

- Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Database of State Incentives for Renewables and Efficiency (DSIRE)
  - Arizona Incentives/Policies
  - Federal Incentives/Policies
  - Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The Following Solicitations Are Now Available:
(Click On Title To View Solicitation)

- U.S. Dept. Of Agriculture - Rural Development Grant Assistance
- NEW! Research And Development For Hydrogen Storage– Response Due January 17, 2014
- Hydrogen Delivery Technologies - Response Due February 14, 2014
- Certification And Rating Of Attachments For Fenestration Technologies (CRAFT) - Response Due February 15, 2014
- Assisting Federal Facilities With Energy Conservation Technologies - Response Due February 18, 2014
- Energy Frontier Research Centers – Response Due By January 9, 2014
- Research And Development For Hydrogen Storage – Response Due January 17, 2014
- NEW! Technical Assistance And Training Grant Utilities Programs - Response Due January 31, 2014
- NEW! Solid Waste Management Grant Program Utilities Programs - Response Due January 31, 2014
- NEW! Environmental Education Model Grants - Response Due February 4, 2014
- NEW! SBIR/STTR FY 2014 Phase 1 Release 2 - Response Due February 4, 2014
- NEW! Environmental Workforce Development And Job Training Grants - Response Due February 13, 2014

- Hydrogen Delivery Technologies – Response Due By February 14, 2014
- Assisting Federal Facilities With Energy Conservation Technologies (AFFECT) – Response Due By February 18, 2014
- NEW! Energy For Sustainability - Response Due February 20, 2014
- Environmental Sustainability - Response Due February 20, 2014
- Environmental Health And Safety Of Nanotechnology - Response Due February 20, 2014
- Particulate And Multiphase Processes- Response Due February 20, 2014
- Thermal Transport Processes - Response Due February 20, 2014
- NEW! Value Added Producer Grant - Response Due February 24, 2014
- Plant Feedstock Genomics For Bioenergy: A Joint - Response Due Date: February 25, 2014
- NEW! Next Generation Photovoltaic Technologies 3 - Response Due March 3, 2014
- NEW! Sunshot Incubator Program Round 9 - Response Due March 13, 2014
- Advanced Fossil Energy Projects - Solicitation Number: DE-SOL-0006303 - Expiration Date 11/30/2016
- Sunshot "Race To The Roof" Initiative - Registration Due October 31,2014
- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Sustainable Agriculture Research And Education Grants – Ongoing
- Renewable Energy Rfps - Solicitations For Renewable Energy Generation, Renewable Energy Certificates, And Green Power – Various Deadlines

ENERGY-RELATED EVENTS

2014

- 4th Annual Electric Energy Storage Conference
  January 14-16, 2014 San Diego, CA
- Energy, Utility & Environment Conference
  February 3-5, 2014 Phoenix, AZ
- Solar Power Generation USA Congress 2014
  February 4-5, 2014 San Diego, CA
- 2014 Energy Outlook Conference
  February 4-7, 2014 Washington, DC
- Sustainability Solutions Festival
  February 17-22, 2014 Phoenix, AZ
- Arizona Solar Summit IV
  February 20, 2014 Phoenix, AZ

- Green Biz Forum 2014
  February 18-20, 2014 Phoenix, AZ
- International Geothermal Energy Forum
  April 23-24, 2014 Washington, DC
- Native American Economic Development & Energy Projects Conference
  June 16-17, 2014 Anaheim, CA
- 32nd Annual West Coast Energy Management Congress
  June 25-26, 2014 Seattle, WA
- National Geothermal Summit
  August 5-6, 2014 Reno, NV
- Geothermal Energy Expo
  September 28-October 1, 2014 Portland, OR
- ASU Sustainability Series Events
- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ